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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Guido Maurizio Oliva

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04/01/2004

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EXAMINER

LEE, DIANE I

ART UNIT

PAPER NUMBER

2876

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/688,170

Applicant(s)

OLIVA, GUIDO MAURIZIO

Examiner

D. I. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-12 and 14-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33-36 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-12, 14-23, 25-27 and 29-32 is/are rejected.
- 7) ☒ Claim(s) 24 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Receipt is acknowledged of the Amendment filed 15 December 2003. Claims 1, 19, 20-21 have been amended; claims 35-36 have been newly added; and no claims have been canceled. Receipt is also acknowledged of the subsequent Amendment filed 14 January 2004, which is a duplicate copy of the Amendment previously filed 15 December 2003. Currently, claims 1-5, 7-12, and 14-36 are pending in this application.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 December 2003 has been entered.

3.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1, 3-5, 7-9, 11, 16, 19-23, 25-27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rudeen [US 5,627,360-cited by the applicant] in view of Reich [US 5,254,853].**

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Re claims 1, 3, and 19-21: Rudeen discloses a device providing spotter beams 127, 129 for the aiming and visually indicating 130 reading area of a coded information reader (see the abstract), comprising:

a laser diode 32 and an LED 50 as a means for emitting a light beam (see figure 5);

an optical element 20A that refracting the light beam (i.e., separate the beam) into at least two different parts, thus the light beam is split to provide at least different light beam portions active on at least two different zones of a reading area (i.e., cursor beam 126, 128) of a reading area of a coded information reader along at least two different optical paths (i.e., the optical element 20A having a first and second end portions 122, 124 with a central portion 120 therebetween and wherein the first and second end portions 122, 124 refract the light beam or separate the beam into different parts, thus the light beam is separated to provide different light beam portions active and adapted to be projected on at least two different zones of a reading area of a coded information reader along at least two different optical paths each one on opposite sides of the scan line 130 (see col. 3, lines 1+; col. 7, lines 18+, 38+; col. 8, lines 16+; and figures 5, 8, 10, 12);

wherein that said the refractive optical element 20A comprises at least two different surface portions 122, 124, which likely project said two different beam portions 126, 128 simultaneously onto said at least two different zones 127, 129 of reading area (i.e., the two end portions 122 and 124 of the optical surfaces create a pair of cursor beam 126, 128 to form a pair of visible light sports or cursor images 127, 129 on a target, i.e., two joined visible light sports or cursor images 127, 129 on a target) one on opposite sides of the scan line 130, wherein the first and second surface portions 122, 124 of the optical element 20A are for aiming purposes) (see col. 7, lines 8+ and figures 6A-8, 10-12).

Rudeen fails to teach two different surface portions 122, 124 collect the emitted beam simultaneously.

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Reich discloses an optical system having an LED 16 that emits a light beam, a cylindrical lens that forms the light emitted by the LED into a sheet-shaped beam 22 having a field of view 28 (see figure 1).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the beam shaping means as taught by Reich in the teaching of Rudeen in order to provide define beam of light and the field of view without sweeping the beam. Such modification would have provided a simple and an inexpensive optical device.

Re claims 4-5, 16, 22-23, and 30: wherein said refractive optical element 20A comprises first and second opposed faces (lower surface and upper surface 119 of the refractive optical element 20A) respectively for collecting the light beam and projecting at least two beam portions (126, 127; 128, 129) on the reading area, wherein an optical axis is defined into the refractive optical element. The second opposed face (upper surface 119) comprises two first surfaces portions 122, 124, each one inclined by a predetermined angle α with respect to the first face (i.e., the inclined surface portion of the refractive optical element is substantially planar with respect the lower surface of 20A) and adapted to deflect a corresponding portion of light beam by a predetermined deflection angle β (i.e., the angle defined by the inclined surfaces of 122 and 124) with respect to the optical axis (see col. 7, lines 33+ and figures 7B, 8, 10, 12).

Re claims 7-8 and 25-26: wherein the refractive optical element also comprises a central surface portion (a central portion 120 centrally located in the optical element with respect to the inclined portions 122, 124) for transmitting, without any deflection, a second portion of light beam towards the reading area (see col. 7, lines 7-49; and figures 5, 10-12).

Re claim 9: wherein the second surface portion 120 is substantially flat and parallel to the first face (i.e., lower/bottom surface of the optical element 20A) for collecting the light beam (see figure 7B).

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Re claims 11 and 27: wherein the refractive optical element 20A has a cross section smaller than that of the light beam (see figures 6-9 and 12-13).

6. **Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rudeen as modified by Reich as applied to claim 1 above, and further in view of Reddersen et al. [US 5,296,689].** The teachings of Rudeen as modified by Reich have been discussed above.

Rudeen teaches the refractive optical element 20A having a central portion 120 extended between the first and the second faces and coaxially formed with respect to the optical axis, wherein the central portion for transmitting the second portion of the light (i.e., laser beam) without any deflection towards the reading area.

Rudeen as modified by Reich does not disclose the central portion of the refractive optical element is a through hole and wherein the through hole forming the means for transmitting without any deflection at second portion of light beam towards the reading area.

Reddersen discloses an aiming beam system for optical data reading device having a refractive optical element (a diffractive optical module 20 having a first and a second diffraction surface portions 50a, 50b for deflecting portion of the light beam from the light source 10), wherein the central portion of the refractive optical element 20A is an aperture or a window extended between the first and the second diffraction portion. The central portion (i.e., aperture) transmits the beam without any deflection towards the reading area (see col. 2, lines 38+ and figure 1).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to substitute the refractive optical element of Reddersen with the refractive optical element of Rudeen as modified by Reich in order to simplified the optical element of the device. Furthermore, the central portion of the Rudeen appears to have some or minimal beam refraction or focusing when the beam strikes the surface directly (see col. 7, lines 8-17). Therefore, substituting the diffractive optical module of Reddersen would eliminate any possible beam refraction and focusing.

7. **Claims 2, 12, 14-15, 17-18, 29, and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rudeen as modified by Reich as applied to claim 1 above, and further in view of Canini [EP 0 0997 760 A1].** The teachings of Rudeen as modified by Reich have been discussed above.

Re claims 2, 12, 14, and 29: Rudeen as modified by Reich does not disclose the device including a means for collimating the light beam and an amplitude mask adapted to impart a predetermined profile to at least two different beam portions.

Canini discloses an optical device for aiming and visually indicating a reading area having an illuminating assembly comprising an LED as a light beam emitting source, an amplitude mask (a diaphragm 4 having a preset shape or predetermined profile effective to select a portion of the light beam generated by the emitting source) placed downstream of the LED, and a converging lens fixedly placed on the downstream of the amplitude mask adapted to collimate the shaped light beam coming from the amplitude mask and project it onto the reading area (see the abstract; col. 2, lines 1+; col. 7, lines 3+ ; and figure 1). The optical device, located on the optical path downstream of the illuminating assembly, a light deflecting prism 9 which is a refractive optical element (see figure 1).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the illuminating assembly of the Canini having collimating lens and the amplitude mask in the reader of Rudeen as modified by Reich in order to prevent the divergent beam the light beam and maintain the narrow beam intensity before the beam strikes the refractive optical component. Such modification would have provided an accurate beam deflecting result and sharp spotting beam on the reading area.

Re claim 15: Rudeen as modified by Reich and Canini discloses that the optical device includes a light deflecting prism 9, which is a refractive optical element, located on downstream of the illuminating assembly of the optical path (see figure 1).

Rudeen as modified by Reich and Canini does not teach the specific arrangement of the amplitude mask, i.e., it is arranged between the collimating lens and the refractive optical element.

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to modify the specific arrangement of the collimating lens and the amplitude mask such that the amplitude mask is arranged between the collimation means and the refractive optical element since both arrangement provides a preset shaped of the of the light beam generated by the emitting source. Accordingly, such modification would have further reduced the diverging effect of the light, and therefore, it would have been an obvious expedient.

Re claims 17 and 31: Although the refractive optical element comes in various shapes, Rudeen as modified by Reich and Canini does not teach other geometric configuration of the optical element.

Since other geometric configuration of the refractive optical element includes (i.e., the cylindrical, convex, spherical lens, and etc., it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to substitute the other geometric configuration of the refractive optical element to provide an equivalent function (i.e., deflecting the light beam). Accordingly, such modification would have been an obvious extension taught by Rudeen as modified by Reich and Canini and well within the ordinary skill in the art as taught by Rudeen as modified by Canini.

Re claims 18 and 32: Rudeen teaches that the light of the scanning beam which strikes the refractive optical element which obviously teaches that the reshaping process of the scanning beam is arranged upstream of the refractive optical element. Therefore, it would have been an obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate an additional optical

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component provided upstream of the refractive optical element according to the desired beam modification.

Allowable Subject Matter

8. Claims 33-36 are allowed.
9. Claims 24, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
10. The following is a statement of reasons for the indication of allowable subject matter: the best prior art of the record, Rudeen as modified by Reddersen and Canini, fails to teach or fairly suggest the specific structural of the refractive optical element (i.e., the second opposed face having four first surface portions, each one inclined by a predetermined angle with respect to the first face and adapted to deflect a corresponding portion of the light beam and a poly-prismatic structure having a substantially pyramidal shape with a rhomboidal base) and the predetermined deflection angles in relation to first opposed face and the deflecting angles in relation to the optical axis of the first and the second peripheral inclined surface portion, respectively, are different, as set forth in the claims.

Response to Arguments

11. Applicant's arguments filed 27 December 2002 have been fully considered but they are not persuasive.
12. Applicant's arguments with respect to claims 1, 4-5, 7-9, 11, 16, 19-23, 25-27, and 30 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. I. Lee whose telephone number is (571) 272-2399. The examiner can normally be reached on Monday through Thursday from 5:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



D. I. Lee
Primary Examiner
Art Unit 2876

D. L.